CLAIMS

What is claimed is:

1. A method for detecting prolonged myocardial repolarization as an indicator of transmural ischemia or infarction in a mammalian subject, comprising the steps of:

obtaining baseline electrocardiogram data derived from the subject;

performing an electrocardiogram on the subject after the baseline data was derived from the subject; and

comparing the baseline electrocardiogram data with data from the electrocardiogram to determine whether the time interval of myocardial repolarization is increased.

2. The method of Claim 1, wherein the comparing step comprises comparing QT interval data in the baseline data with QT interval data from the electrocardiogram.

3. The method of Claim 1, wherein the comparing step is automated in whole or in part.

4. The method of Claim 1, wherein the comparing step is manual in whole or in part.

5. The method of Claim 1, wherein the subject is a human.

6. The method of Claim 5, wherein the human subject is suspected of having suffered myocardial ischemia after the baseline electrocardiogram data was derived from the subject.

7. A method for detecting prolonged myocardial repolarization as an indicator of transmural ischemia or infarction in a mammalian subject, comprising the steps of:

obtaining baseline cardiac electrical data derived from the subject;

measuring cardiac electrical activity in the subject after the

baseline data was derived from the subject; and

comparing the baseline data with data from the measurement of the cardiac electrical activity to determine whether the time interval of myocardial repolarization is increased.

8. The method of Claim 7, wherein the comparing step comprises comparing activation recovery interval data in the baseline data with activation recovery interval data from the measurement of cardiac electrical activity.

9. The method of Claim 7, wherein the comparing step comprises comparing monophasic action potential data in the baseline data with monophasic action potential data from the measurement of cardiac electrical activity.

10. A method of detecting myocardium at risk or myocardial viability by measurement of changes in myocardial repolarization in a mammalian subject, comprising the steps of:

performing an electrocardiogram on the subject to obtain baseline electrocardiogram data;

performing a clinical procedure on the subject;

monitoring the subject's electrocardiogram during the clinical procedure to obtain electrocardiogram data; and

comparing the baseline electrocardiogram data with the electrocardiogram data from the clinical procedure to determine whether the time interval of myocardial repolarization is changed during the procedure.

11. The method of Claim 10, wherein the subject is a human.

12. A method of detecting myocardium at risk or myocardial viability by measurement of changes in myocardial repolarization in a mammalian subject, comprising the steps of:

measuring baseline cardiac electrical data in the subject;

performing a clinical procedure on the subject;

measuring cardiac electrical data in the subject during the clinical procedure; and

comparing the baseline data with the cardiac electrical data from the clinical procedure to determine whether the time interval of myocardial repolarization is changed during the procedure.

13. The method of Claim 12, wherein the subject is a human.

14. The method of Claim 12, wherein the comparing step comprises comparing activation recovery interval data in the baseline data with activation recovery interval data from the measurement of cardiac electrical activity.

15. The method of Claim 12, wherein the comparing step comprises comparing monophasic action potential data in the baseline data with monophasic action potential data from the measurement of cardiac electrical activity.

16. A method of detecting ischemic preconditioning by measurement of changes in myocardial repolarization in a mammalian subject, comprising steps of:

initiating an electrocardiogram on the subject;

performing a first step of a clinical procedure on the subject;

capturing first electrocardiogram data from the subject during the time period in which the first step of the clinical procedure was performed;

performing one or more additional steps of a clinical procedure on the subject;

capturing electrocardiogram data from the one or more additional steps of a clinical procedure; and

comparing the first electrocardiogram data with electrocardiogram data from the one or more additional steps to determine whether the time interval of myocardial repolarization is changed between the first step of the clinical procedure and any of the subsequent steps.

17. The method of Claim 16, wherein the subject is a human.

18. A method of detecting ischemic preconditioning by measurement of changes in myocardial repolarization in a mammalian subject, comprising steps of:

initiating the measurement of cardiac electrical data in the subject;

performing a first step of a clinical procedure on the subject;

capturing cardiac electrical data from the subject during the time period in which the first step of the clinical procedure was performed;

performing one or more additional steps of a clinical procedure on the subject;

capturing cardiac electrical data from the one or more additional steps of a clinical procedure; and

comparing the first cardiac electrical data with cardiac electrical data from the one or more additional steps to determine whether the time interval of myocardial repolarization is changed between the first step of the clinical procedure and any of the subsequent steps.

19. The method of Claim 18, wherein the subject is a human.

20. The method of Claim 18, wherein the comparing step comprises comparing activation recovery interval data in the baseline data with activation recovery interval data from the measurement of cardiac electrical activity.

21. The method of Claim 18, wherein the comparing step comprises comparing monophasic action potential data in the baseline data with monophasic action potential data from the measurement of cardiac electrical activity.

22. An electronic apparatus for detecting prolonged myocardial repolarization as an indicator of transmural ischemia or infarction in a mammalian subject, comprising:

Means for storing baseline electrocardiogram data derived from the subject;

Means for performing an electrocardiogram on the subject after

the baseline data was derived from the subject; and

Means for comparing the baseline electrocardiogram data with data from the electrocardiogram to determine whether the time interval of myocardial repolarization is increased.

23. The apparatus of Claim 22, wherein the subject is a human.

24. The apparatus of Claim 22, wherein the comparing means comprises an algorithm.

25. An electronic apparatus for detecting prolonged myocardial repolarization as an indicator of transmural ischemia or infarction in a mammalian subject, comprising:

Means for storing baseline cardiac electrical data derived from the subject;

Means for measuring cardiac electrical data in the subject after the baseline data was derived from the subject; and

Means for comparing the baseline data with data from the measurement of cardiac electrical data from the subject to determine whether the time interval of myocardial repolarization is increased.

26. The apparatus of Claim 25, wherein the subject is a human.

27. The apparatus of Claim 25, wherein the comparing means comprises an algorithm.

28. The apparatus of Claim 25, wherein the comparing means compares activation recovery interval data in the baseline data with activation recovery interval data from the measurement of cardiac electrical activity.

29. The method of Claim 25, wherein the comparing means compares monophasic action potential data in the baseline data with monophasic action potential data from the measurement of cardiac electrical activity.

30. An electronic apparatus for detecting prolonged myocardial repolarization

as an indicator of myocardium at risk or myocardial viability in a mammalian subject, comprising:

Means for storing baseline cardiac electrical data derived from the subject;

Means for measuring cardiac electrical data in the subject after the baseline data was derived from the subject; and

Means for comparing the baseline data with data from the measurement of cardiac electrical data from the subject to determine whether the time interval of myocardial repolarization is increased.

31. The apparatus of Claim 30, wherein the subject is a human.

32. The apparatus of Claim 30, wherein the comparing means comprises an algorithm.

33. The apparatus of Claim 30, wherein the comparing means compares activation recovery interval data in the baseline data with activation recovery interval data from the measurement of cardiac electrical activity.

34. The method of Claim 30, wherein the comparing means compares monophasic action potential data in the baseline data with monophasic action potential data from the measurement of cardiac electrical activity.

35. An electronic apparatus for detecting prolonged myocardial repolarization as an indicator of ischemic preconditioning in a mammalian subject, comprising:

Means for storing baseline cardiac electrical data derived from the subject;

Means for measuring cardiac electrical data in the subject after the baseline data was derived from the subject; and

Means for comparing the baseline data with data from the measurement of cardiac electrical data from the subject to determine whether the time interval of myocardial

repolarization is increased.

36. The apparatus of Claim 35, wherein the subject is a human.

37. The apparatus of Claim 35, wherein the comparing means comprises an algorithm.

38. The apparatus of Claim 35, wherein the comparing means compares activation recovery interval data in the baseline data with activation recovery interval data from the measurement of cardiac electrical activity.

39. The method of Claim 35, wherein the comparing means compares monophasic action potential data in the baseline data with monophasic action potential data from the measurement of cardiac electrical activity.